4 MAGNETIC MEDIA CONVERSION TO DIGITAL IMAGES

4.1 Purpose

To properly convert analog video signals into digital images.

4.2 Scope

This procedure applies to the conversion of analog media to an accurate digital representation.

4.3 Materials - Equipment (Hardware/Software)

Materials and equipment utilized may include all or some of the following, as determined necessary by the examiner, based on the evidence submitted.

4.3.1 Video playback devices to include consumer grade, professional grade, security/time-lapse machines.

4.3.2 Video recording devices to include consumer grade, professional grade, security/time-lapse machines.

4.3.3 Multiplexers.

4.3.4 Time-base correctors (TBC), consumer and professional grade.

4.3.5 Cabling appropriate for the equipment used.

4.3.6 Forensic Video Processing Systems.

4.3.7 Appropriate output media and printers.

4.3.8 A variety of storage media.

4.3.9 Professional monitors.

4.3.10 Analog to Digital Converters.

4.4 Limitations

None for this procedure

4.5 Safety

None for this procedure

4.6 Procedures

4.6.1 Ensure preliminary examination has been performed.

4.6.2 Determine proper equipment for optimum playback.

4.6.3 Determine and locate the Area of Interest (AOI).

4.6.3.1 Using the proper selected playback unit and settings, review the submitted recording to located the AOI based on the information provided. In instances where the AOI cannot be located, contact the Investigator for additional information.

4.7 Digitizing/Capture of the AOI

Any action that may damage the original recording is inappropriate and should not be used. These include, but are not limited to, maintaining the recording in the "pause" mode, repeated playback of the recording, and exposure to strong magnetic fields.

4.7.1 Perform any pre-processing adjustment of the input signal.

4.7.2 If an analog signal, the appropriate software/hardware selection should be utilized for capture. If a digital signal, select the appropriate software/hardware to digitize/capture.

4.7.3 Capture/digitize the AOI's in either still image or video stream(s), in accordance with hardware and/or software instructions.

4.7.4 The image or video stream(s) should be stored in a .TIFF file format, uncompressed file format, or other lossless compression format.

4.7.5 Output the clarified images to the appropriate media.

4.8 References

Owner's Manuals, User's Manuals and vendor specific manuals should be referenced for equipment operating instructions.

Blitzer, Herbert L., and Jack Jacobia. Forensic Digital Imaging and Photography. San Diego: Academic Press, 2002.

Davies, Adrian, and Phil Fennessy. Digital Imaging for Photographers. 4th ed. Oxford: Focal Press, 2001.

Inglis, Andrew F. and Arch C. Luther. Video Engineering. 2nd ed. New York: McGraw-Hill, 1996.

Madisetti, Vijay K., and Douglas B. Williams, eds. The Digital Signal Processing Handbook. N.p.: CRC Press LLC, 1998.

Solari, Stephen J., Digital Video and Audio Compression. New York: McGraw-Hill, 1997.

Utz, Peter. Today's Video. 4th ed. Jefferson, NC: McFarland and Company, Inc., 2006.

Whitaker, Jerry, and Blair Benson. Standard Handbook of Video and Television Engineering. 3rd ed. New York: McGraw-Hill, 2000.

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